# Overweight and Obesity

### **OVERWEIGHT OR OBESE**

Definition: Overweight or obese is defined as respondents who report having a Body Mass Index (BMI) of 25.0 or above. Body Mass Index (BMI) is calculated by taking a person's body weight in pounds divided by his or her height in inches divided by height in inches (again) times 703 (i.e., ((wt/ht)/ht x 703).

### Prevalence of Overweight or Obese

- South Dakota 65.5%
- o Nationwide median 62.9%

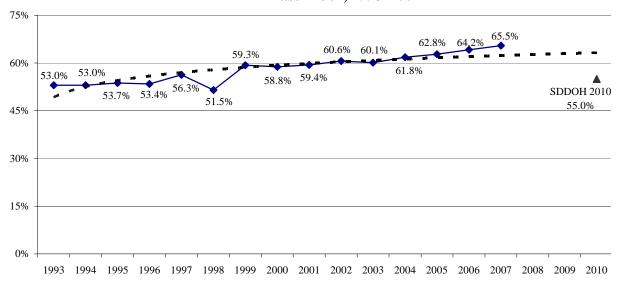
### South Dakota Department of Health 2010 Initiative

Reduce the percent of adults who are overweight or obese to 55 percent.

### **Trend Analysis**

Overall, the percent of respondents who are overweight or obese has been increasing since the question was first asked in 1993. South Dakota has not met the *South Dakota Department of Health 2010 Initiative* goal of 55 percent.

Figure 1
Percent of Respondents Who Are Overweight or Obese Based on Body
Mass Index, 1993-2007



Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 1993-2007

### **Demographics**

### Gender

Males exhibit a significantly higher prevalence of those who are overweight or obese than females. This difference is shown throughout many demographic groups including those with a household income of \$25,000 or more and those with a high school education or higher.

### Age

The prevalence of overweight or obesity increases as age increases until the 55-64 age group is reached, at which time the prevalence decreases as age increases. This includes a significant increase when the 25-34 age group is reached and then a significant decrease with the 75 and older population.

### Race

American Indian females exhibit a significantly higher prevalence of those who are overweight or obese than do white females. This racial difference is not evident with males.

### Region

Those in the central and American Indian counties regions demonstrate a very high prevalence of those who are overweight or obese while those in the southeast and west regions show a very low prevalence. These regional differences are much more evident in females.

### Household Income

The prevalence of females who are overweight or obese generally decreases as household income increases. Males do not exhibit this same association.

### **Education**

The prevalence of overweight or obese does not seem to follow a pattern as education changes.

# **Employment Status**

Those who are self-employed or unable to work exhibit a very high prevalence of overweight or obesity, while those who are unemployed or a homemaker show a very low prevalence.

### Marital Status

Those who are widowed or have never been married demonstrate a very low prevalence of those who are overweight or obese, while those who are married or divorced show a very high prevalence. These differences are much more evident with males than females with the exception of those who are widowed.

|                          |         |        | Т           | phle 4                  |        |             |         |      |             |
|--------------------------|---------|--------|-------------|-------------------------|--------|-------------|---------|------|-------------|
|                          | Posnor  | ndonte |             | able 4<br>Overwei       | aht or | · Oboso 20  | 07      |      |             |
|                          | Kespoi  | Tota   |             | Overweight or Obese, 20 |        |             | Female  |      |             |
|                          | # Resp. | %      | 95% CI      | # Resp.                 | %      | 95% CI      | # Resp. | %    | 95% CI      |
| Total                    | 6,536   | 65.5   | (63.7-67.3) | 2,786                   | 73.8   | (71.2-76.3) | 3,750   | 56.9 | (54.5-59.3) |
| Age                      | Ź       |        | · ·         | Í                       |        | ,           | ,       |      | ,           |
| 18-24                    | 236     | 47.6   | (39.7-55.6) | 123                     | 47.4   | (36.6-58.4) | 113     | 47.8 | (36.4-59.5) |
| 25-34                    | 733     | 66.3   | (62.2-70.2) | 299                     | 75.0   | (68.9-80.1) | 434     | 56.7 | (51.2-61.9) |
| 35-44                    | 887     | 69.9   | (66.2-73.3) | 416                     | 81.7   | (76.9-85.7) | 471     | 57.0 | (51.6-62.3) |
| 45-54                    | 1,360   | 70.4   | (67.5-73.3) | 595                     | 81.7   | (77.7-85.1) | 765     | 58.5 | (54.3-62.6) |
| 55-64                    | 1,272   | 73.3   | (70.4-76.1) | 568                     | 78.8   | (74.7-82.5) | 704     | 66.9 | (62.7-70.8) |
| 65-74                    | 1,008   | 71.1   | (67.7-74.3) | 419                     | 82.1   | (77.6-85.9) | 589     | 60.7 | (55.8-65.3) |
| 75+                      | 1,002   | 58.8   | (55.2-62.3) | 358                     | 68.1   | (62.2-73.4) | 644     | 52.6 | (48.1-57.0) |
| Race                     |         |        |             |                         |        |             |         |      |             |
| White                    | 5,721   | 65.1   | (63.3-67.0) | 2,449                   | 74.4   | (71.6-76.9) | 3,272   | 55.8 | (53.2-58.3) |
| American Indian          | 576     | 73.5   | (66.1-79.8) | 229                     | 71.8   | (59.2-81.7) | 347     | 75.3 | (67.6-81.6) |
| Region                   |         |        |             |                         |        |             |         |      |             |
| Southeast                | 1,448   | 65.2   | (61.7-68.5) | 635                     | 73.1   | (68.0-77.6) | 813     | 56.5 | (51.7-61.1) |
| Northeast                | 1,411   | 66.9   | (63.6-70.0) | 627                     | 74.3   | (69.3-78.8) | 784     | 58.2 | (53.8-62.5) |
| Central                  | 1,357   | 71.0   | (67.7-74.1) | 573                     | 77.4   | (72.3-81.8) | 784     | 64.6 | (60.2-68.9) |
| West                     | 1,468   | 59.8   | (56.3-63.1) | 597                     | 71.6   | (66.7-76.0) | 871     | 49.8 | (45.1-54.5) |
| American Indian Counties | 852     | 75.6   | (70.9-79.8) | 354                     | 79.1   | (71.9-84.8) | 498     | 72.0 | (65.5-77.7) |
| Household Income         |         |        |             |                         |        |             |         |      |             |
| Less than \$10,000       | 297     | 70.9   | (61.6-78.8) | 100                     | 76.1   | (64.0-85.1) | 197     | 67.5 | (53.4-79.1) |
| \$10,000-\$14,999        | 351     | 64.7   | (56.2-72.4) | 121                     | 69.2   | (56.2-79.7) | 230     | 61.9 | (50.5-72.1) |
| \$15,000-\$19,999        | 480     | 71.8   | (65.9-77.1) | 177                     | 79.1   | (70.4-85.7) | 303     | 66.0 | (58.1-73.1) |
| \$20,000-\$24,999        | 634     | 66.1   | (59.0-72.5) | 231                     | 67.8   | (57.7-76.5) | 403     | 64.8 | (54.8-73.6) |
| \$25,000-\$34,999        | 851     | 72.6   | (68.2-76.6) | 384                     | 79.7   | (73.7-84.6) | 467     | 64.0 | (57.8-69.7) |
| \$35,000-\$49,999        | 1,125   | 67.4   | (63.6-71.0) | 526                     | 75.8   | (70.6-80.3) | 599     | 58.5 | (52.9-63.8) |
| \$50,000-\$74,999        | 1,037   | 66.7   | (62.5-70.6) | 486                     | 76.7   | (70.3-82.1) | 551     | 55.2 | (49.7-60.7) |
| \$75,000+                | 1,017   | 63.3   | (59.3-67.0) | 526                     | 74.8   | (69.5-79.4) | 491     | 47.1 | (41.6-52.7) |

| Table 4 (continued) Respondents Who Are Overweight or Obese, 2007 |         |       |             |         |      |             |         |      |             |
|---|---------|-------|-------------|---------|------|-------------|---------|------|-------------|
|   |         | Total |             |         | Male | :           |         | Fema | le          |
|   | # Resp. | %     | 95% CI      | # Resp. | %    | 95% CI      | # Resp. | %    | 95% CI      |
| <b>Education</b>  |         |       |             |         |      |             |         |      |             |
| 8th Grade or Less   | 248     | 65.8  | (56.8-73.8) | 136     | 70.7 | (57.3-81.2) | 112     | 56.6 | (45.7-66.9) |
| Some High School  | 368     | 54.5  | (45.2-63.6) | 146     | 55.9 | (41.0-69.9) | 222     | 53.1 | (42.1-63.8) |
| High School or G.E.D.   | 2,137   | 67.0  | (63.6-70.1) | 985     | 72.7 | (68.0-76.9) | 1,152   | 60.2 | (55.3-64.9) |
| Some Post-High School   | 1,828   | 67.9  | (64.7-71.0) | 679     | 76.7 | (71.2-81.4) | 1,149   | 60.7 | (56.8-64.5) |
| College Graduate  | 1,946   | 63.6  | (60.6-66.6) | 837     | 76.3 | (72.5-79.7) | 1,109   | 50.4 | (46.2-54.6) |
| Employment Status   |         |       |             |         |      |             |         |      |             |
| Employed for Wages  | 3,041   | 66.5  | (64.0-68.9) | 1,274   | 74.8 | (71.1-78.1) | 1,767   | 57.8 | (54.3-61.1) |
| Self-employed   | 948     | 74.2  | (70.3-77.8) | 636     | 79.2 | (74.4-83.3) | 312     | 61.1 | (54.3-67.6) |
| Unemployed  | 150     | 58.0  | (45.5-69.7) | *       | *    | *           | *       | *    | *           |
| Homemaker   | 399     | 53.2  | (46.4-59.8) | *       | *    | *           | *       | *    | *           |
| Retired   | 1,579   | 65.9  | (63.1-68.5) | 625     | 78.1 | (74.2-81.5) | 954     | 55.1 | (51.4-58.8) |
| Unable to Work  | 313     | 69.4  | (62.1-75.8) | 133     | 62.5 | (52.0-71.9) | 180     | 75.9 | (66.2-83.6) |
| Marital Status  |         |       |             |         |      |             |         |      |             |
| Married/Unmarried Couple  | 3,926   | 68.4  | (66.5-70.2) | 1,805   | 79.2 | (76.8-81.5) | 2,121   | 56.7 | (54.0-59.5) |
| Divorced/Separated  | 903     | 67.2  | (63.1-71.1) | 397     | 76.7 | (70.6-81.8) | 506     | 58.7 | (53.0-64.2) |
| Widowed   | 991     | 61.3  | (57.8-64.7) | 174     | 72.9 | (64.6-79.9) | 817     | 58.7 | (54.8-62.5) |
| Never Married   | 704     | 55.5  | (48.8-62.0) | 408     | 55.6 | (47.3-63.6) | 296     | 55.3 | (44.1-65.9) |

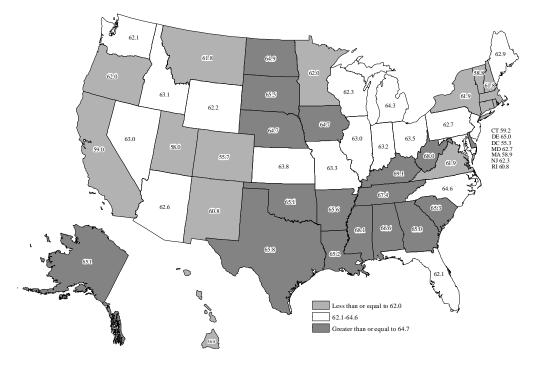
Note: \*Results based on sample sizes less than 100 have been suppressed.

Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2007

### **National Statistics**

The national median for respondents who are overweight or obese was 62.9 percent. South Dakota had 65.5 percent of respondents who are overweight or obese. The District of Columbia had the lowest percent of respondents who are overweight or obese with 55.3 percent, while Kentucky had the highest percent of respondents who are overweight or obese with 69.1 percent.

Figure 2 Nationally, Respondents Who Are Overweight or Obese, 2007



# **Further Analysis**

Following are data illustrating the percent of those who are overweight or obese for various health behaviors and conditions. For example, 84.8 percent of respondents who have diabetes are overweight or obese, while 64.1 percent of respondents who do not have diabetes are overweight or obese.

| Table 5  |               |                       |           |  |  |  |  |  |
|--|---------------|-----------------------|-----------|--|--|--|--|--|
| Overweight or Obese for Selected Health Behaviors and Conditions, 2007 |               |                       |           |  |  |  |  |  |
| Health Behavior or Condition   | # Respondents | % Overweight or Obese | 95% CI    |  |  |  |  |  |
| No Leisure Time Physical Activity                                      | 1,757         | 70.9                  | 67.5-74.1 |  |  |  |  |  |
| Leisure Time Physical Activity   | 4,774         | 64.0                  | 61.9-66.0 |  |  |  |  |  |
| No Moderate Physical Activity  | 3,361         | 69.4                  | 66.9-71.8 |  |  |  |  |  |
| Moderate Physical Activity   | 2,743         | 62.9                  | 60.2-65.4 |  |  |  |  |  |
| No Vigorous Physical Activity  | 4,947         | 67.9                  | 65.9-69.8 |  |  |  |  |  |
| Vigorous Physical Activity   | 1,305         | 61.0                  | 57.1-64.7 |  |  |  |  |  |
| Less Than Five Servings of Fruits and Vegetables                       | 5,110         | 66.7                  | 64.6-68.7 |  |  |  |  |  |
| At Least Five Servings of Fruits and Vegetables                        | 1,308         | 61.4                  | 57.7-65.0 |  |  |  |  |  |
| Current Smoker   | 1,243         | 63.5                  | 59.3-67.4 |  |  |  |  |  |
| Former Smoker  | 1,904         | 74.2                  | 71.7-76.6 |  |  |  |  |  |
| Never Smoked   | 3,378         | 62.5                  | 59.9-65.0 |  |  |  |  |  |
| Smokeless Tobacco Use  | 302           | 73.6                  | 65.5-80.4 |  |  |  |  |  |
| No Smokeless Tobacco Use   | 5,972         | 65.4                  | 63.6-67.2 |  |  |  |  |  |
| Diabetes   | 621           | 84.8                  | 80.9-88.0 |  |  |  |  |  |
| No Diabetes  | 5,914         | 64.1                  | 62.3-66.0 |  |  |  |  |  |
| Hypertension   | 2,216         | 79.6                  | 77.5-81.5 |  |  |  |  |  |
| No Hypertension  | 4,317         | 60.8                  | 58.5-62.9 |  |  |  |  |  |
| High Blood Cholesterol   | 2,130         | 76.2                  | 73.9-78.4 |  |  |  |  |  |
| No High Blood Cholesterol  | 3,266         | 63.2                  | 60.9-65.6 |  |  |  |  |  |
| No Health Insurance (18-64)  | 3,872         | 66.8                  | 64.6-69.0 |  |  |  |  |  |
| Health Insurance (18-64)   | 383           | 67.6                  | 60.2-74.1 |  |  |  |  |  |
| Employer Based Health Insurance Coverage (18-64)                       | 2,474         | 66.0                  | 63.4-68.6 |  |  |  |  |  |
| Private Health Insurance Plan (18-64)                                  | 541           | 65.4                  | 59.5-70.9 |  |  |  |  |  |
| Medicare (18-64)   | 155           | 71.7                  | 61.9-79.7 |  |  |  |  |  |
| Medicaid or Medical Assistance (18-64)                                 | 147           | 77.2                  | 65.8-85.6 |  |  |  |  |  |
| The Military, CHAMPUS, TriCare, or the VA (18-64)                      | 220           | 65.6                  | 52.8-76.5 |  |  |  |  |  |
| The Indian Health Service (18-64)                                      | 260           | 72.5                  | 61.3-81.4 |  |  |  |  |  |
| No Flu Shot (65+)  | 477           | 65.1                  | 59.7-70.0 |  |  |  |  |  |
| Flu Shot (65+)   | 1,526         | 64.6                  | 61.7-67.3 |  |  |  |  |  |
| No Pneumonia Shot (65+)  | 684           | 63.9                  | 59.5-68.0 |  |  |  |  |  |
| Pneumonia Shot (65+)   | 1,241         | 65.4                  | 62.2-68.5 |  |  |  |  |  |
| Doesn't Use Sun Block  | 4,002         | 67.4                  | 65.2-69.6 |  |  |  |  |  |
| Uses Sun Block   | 1,523         | 61.0                  | 57.2-64.7 |  |  |  |  |  |
| Doesn't Know Cervical Cancer-HPV Connection (Females)                  | 728           | 60.4                  | 55.9-64.8 |  |  |  |  |  |
| Knows Cervical Cancer - HPV Connection (Females)                       | 2,828         | 56.5                  | 53.6-59.3 |  |  |  |  |  |
| Drank Alcohol in Past 30 Days  | 3,404         | 65.6                  | 63.2-67.9 |  |  |  |  |  |
| No Alcohol in Past 30 Days   | 3,096         | 65.5                  | 62.7-68.2 |  |  |  |  |  |
| Binge Drinker  | 865           | 66.1                  | 61.1-70.7 |  |  |  |  |  |
| Not a Binge Drinker  | 5,544         | 65.9                  | 64.0-67.7 |  |  |  |  |  |
| Heavy Drinker  | 219           | 56.7                  | 45.2-67.5 |  |  |  |  |  |
| Not a Heavy Drinker  | 6,128         | 66.3                  | 64.5-68.1 |  |  |  |  |  |
| Previously Had a Heart Attack  | 446           | 77.3                  | 72.3-81.6 |  |  |  |  |  |
| Never Had a Heart Attack   | 6,064         | 64.8                  | 63.0-66.7 |  |  |  |  |  |

| Table 5 (continued)   |               |              |           |  |  |  |  |
|---|---------------|--------------|-----------|--|--|--|--|
| Overweight or Obese for Selected Health                     | Behaviors and |              |           |  |  |  |  |
|   |               | % Overweight |           |  |  |  |  |
| Health Behavior or Condition                                | # Respondents | or Obese     | 95% CI    |  |  |  |  |
| Have Angina or Coronary Heart Disease                       | 388           | 74.4         | 68.8-79.3 |  |  |  |  |
| Do Not Have Angina or Coronary Heart Disease                | 6,074         | 65.2         | 63.3-67.0 |  |  |  |  |
| Previously Had a Stroke                                     | 253           | 65.4         | 57.8-72.3 |  |  |  |  |
| Never Had a Stroke  | 6,270         | 65.5         | 63.7-67.3 |  |  |  |  |
| Current Asthma  | 481           | 66.4         | 58.5-73.5 |  |  |  |  |
| Former Asthma   | 165           | 70.2         | 59.9-78.7 |  |  |  |  |
| Never Had Asthma  | 5,850         | 65.3         | 63.4-67.1 |  |  |  |  |
| Arthritis   | 2,304         | 72.6         | 70.0-75.0 |  |  |  |  |
| No Arthritis  | 4,134         | 63.0         | 60.8-65.2 |  |  |  |  |
| Arthritis - Activities Limited                              | 1,093         | 76.8         | 73.3-79.9 |  |  |  |  |
| No Arthritis - Activities Limited                           | 5,327         | 64.0         | 62.0-65.9 |  |  |  |  |
| Fair or Poor Health Status                                  | 1,092         | 73.6         | 69.6-77.2 |  |  |  |  |
| Excellent, Very Good, or Good Health Status                 | 5,427         | 64.4         | 62.4-66.3 |  |  |  |  |
| Physical Health Not Good for 30 Days of the Past 30         | 490           | 69.8         | 63.7-75.2 |  |  |  |  |
| Physical Health Not Good for 0-29 Days of the Past 30       | 5,909         | 65.2         | 63.4-67.1 |  |  |  |  |
| Mental Health Not Good for 20-30 Days of the Past 30        | 352           | 75.6         | 69.2-81.0 |  |  |  |  |
| Mental Health Not Good for 0-19 Days of the Past 30         | 6,084         | 65.1         | 63.2-66.9 |  |  |  |  |
| Usual Activities Unattainable for 10-30 Days of the Past 30 | 469           | 72.8         | 67.2-77.8 |  |  |  |  |
| Usual Activities Unattainable for 0-9 Days of the Past 30   | 6,015         | 65.0         | 63.2-66.9 |  |  |  |  |
| Dissatisfied / Very Dissatisfied with Life                  | 253           | 68.3         | 58.4-76.8 |  |  |  |  |
| Satisfied / Very Satisfied with Life                        | 6,039         | 65.6         | 63.8-67.4 |  |  |  |  |
| Physical, Mental, or Emotional Disability                   | 1,473         | 72.2         | 68.8-75.3 |  |  |  |  |
| No Physical, Mental, or Emotional Disability                | 4,997         | 64.1         | 62.0-66.1 |  |  |  |  |
| Disability with Special Equipment Needed                    | 577           | 74.1         | 69.5-78.2 |  |  |  |  |
| No Disability with Special Equipment Needed                 | 5,897         | 65.0         | 63.2-66.9 |  |  |  |  |
| Two or More Hours of TV Watched Per Day                     | 4,659         | 69.2         | 67.2-71.2 |  |  |  |  |
| Less Than Two Hours of TV Watched Per Day                   | 1,529         | 57.4         | 53.8-60.9 |  |  |  |  |
| Never Been Tested for HIV (18-64)                           | 3,281         | 65.8         | 63.3-68.3 |  |  |  |  |
| Been Tested for HIV (18-64)                                 | 981           | 66.5         | 62.4-70.4 |  |  |  |  |
| Diarrhea in Past 30 Days                                    | 924           | 68.7         | 63.4-73.6 |  |  |  |  |
| No Diarrhea in Past 30 Days                                 | 5,359         | 65.4         | 63.5-67.3 |  |  |  |  |
| Military Veteran  | 992           | 78.2         | 74.9-81.1 |  |  |  |  |
| Not a Military Veteran                                      | 5,541         | 63.5         | 61.5-65.5 |  |  |  |  |

### **OBESITY**

Definition: Obesity is defined as respondents who report having a Body Mass Index (BMI) of 30.0 or above. Body Mass Index (BMI) is calculated by taking a person's body weight in pounds divided by his or her height in inches divided by height in inches (again) times 703 (i.e., ((wt/ht)/ht x 703).

### **Prevalence of Obesity**

- South Dakota 27.2%
- o Nationwide median 26.3%

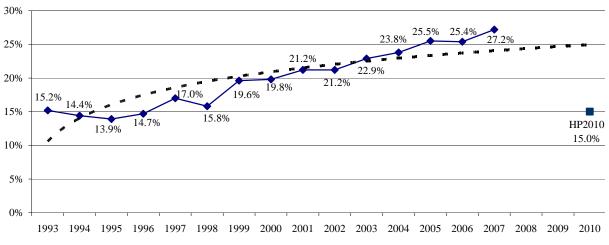
### **Healthy People 2010 Objective**

Reduce the proportion of adults aged 20 years and older who are obese to 15 percent.

### **Trend Analysis**

The percent of respondents who are obese was first asked in 1993 and has been increasing since 1998 when 15.8 percent of respondents were obese. There was an increase from 25.4 percent in 2006 to 27.2 percent in 2007. South Dakota did meet the *Healthy People 2010 Objective* of 15 percent from 1994 to 1996. However, in more recent years, South Dakota has been unable to reach the objective.

Figure 3
Percent of Respondents Who Are Obese Based on Body Mass Index, 1993-2007



Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 1993-2007

### **Demographics**

Gender

There is no significant difference between males and females overall. However, males who are in a household with \$75,000 or more for income, a college graduate, or widowed demonstrate a significantly higher prevalence of obesity than females in the same demographic categories.

Age

The prevalence of obesity generally increases until the 55-64 age group is attained where it seems to reach a high and then declines from there as age increases. This includes a significant decrease as the 75 and older age group is reached.

Race

American Indians exhibit a significantly higher prevalence of obesity than do whites. This difference is much more evident in females.

Region

Those in the central and American Indian counties region show a very high prevalence of obesity, while those in the west region demonstrate a very low prevalence. These regional differences are much more evident in females.

Household Income

The prevalence of obesity seems to generally decrease as household income increases. This association is much more evident in females.

**Education** 

The prevalence of obesity generally decreases for females as education increases. Males do not exhibit this same association.

**Employment Status** 

Those who are unable to work exhibit a very high prevalence of obesity, while those who are employed for wages, self-employed, homemakers, or retired show a very low prevalence. These differences among the various types of employment are much more evident in females.

Marital Status Males who are married or widowed show a very high prevalence of obesity while males who have never been married demonstrate a very low prevalence. Females do not exhibit these same differences.

| Table 6 Respondents Who Are Obese, 2007 |            |      |             |         |      |             |         |      |             |
|---|------------|------|-------------|---------|------|-------------|---------|------|-------------|
|   | Total Male |      |             |         |      | Female      |         |      |             |
|   | # Resp.    | %    | 95% CI      | # Resp. | %    | 95% CI      | # Resp. | %    | 95% CI      |
| Total                                   | 6,536      | 27.2 | (25.7-28.8) | 2,786   | 28.0 | (25.8-30.2) | 3,750   | 26.4 | (24.2-28.8) |
| Age                                     |            |      |             |         |      |             |         |      |             |
| 18-24                                   | 236        | 22.6 | (16.6-30.0) | 123     | 13.0 | (8.0-20.4)  | 113     | 33.1 | (22.8-45.3) |
| 25-34                                   | 733        | 27.4 | (23.7-31.5) | 299     | 29.2 | (23.6-35.6) | 434     | 25.4 | (21.0-30.4) |
| 35-44                                   | 887        | 31.2 | (27.6-34.9) | 416     | 32.6 | (27.6-38.0) | 471     | 29.6 | (24.8-35.0) |
| 45-54                                   | 1,360      | 28.5 | (25.7-31.6) | 595     | 32.3 | (27.9-37.0) | 765     | 24.6 | (21.1-28.4) |
| 55-64                                   | 1,272      | 32.1 | (29.1-35.2) | 568     | 33.1 | (28.8-37.7) | 704     | 30.9 | (27.0-35.1) |
| 65-74                                   | 1,008      | 26.4 | (23.3-29.7) | 419     | 29.0 | (24.3-34.2) | 589     | 23.8 | (20.0-28.1) |
| 75+                                     | 1,002      | 19.1 | (16.4-22.2) | 358     | 23.7 | (18.7-29.5) | 644     | 16.1 | (13.2-19.4) |
| Race                                    |            |      |             |         |      |             |         |      |             |
| White                                   | 5,721      | 26.5 | (24.9-28.2) | 2,449   | 27.4 | (25.2-29.7) | 3,272   | 25.5 | (23.2-28.0) |
| American Indian                         | 576        | 38.2 | (31.9-45.0) | 229     | 37.1 | (27.9-47.3) | 347     | 39.4 | (31.4-48.2) |
| Region                                  |            |      |             |         |      |             |         |      |             |
| Southeast                               | 1,448      | 27.3 | (24.4-30.4) | 635     | 26.7 | (22.9-30.9) | 813     | 27.9 | (23.6-32.6) |
| Northeast                               | 1,411      | 27.5 | (24.7-30.6) | 627     | 30.0 | (25.9-34.6) | 784     | 24.6 | (20.9-28.8) |
| Central                                 | 1,357      | 30.5 | (27.2-34.0) | 573     | 31.6 | (26.9-36.6) | 784     | 29.5 | (24.8-34.6) |
| West                                    | 1,468      | 23.6 | (20.9-26.6) | 597     | 24.6 | (20.9-28.8) | 871     | 22.8 | (19.0-27.1) |
| American Indian Counties                | 852        | 34.0 | (29.6-38.6) | 354     | 33.8 | (27.5-40.8) | 498     | 34.1 | (28.3-40.4) |
| Household Income                        |            |      |             |         |      |             |         |      |             |
| Less than \$10,000                      | 297        | 42.8 | (30.7-55.8) | 100     | 36.4 | (24.2-50.6) | 197     | 47.0 | (30.0-64.7) |
| \$10,000-\$14,999                       | 351        | 34.9 | (28.2-42.2) | 121     | 33.3 | (23.5-44.8) | 230     | 35.9 | (27.2-45.5) |
| \$15,000-\$19,999                       | 480        | 33.1 | (27.0-39.9) | 177     | 32.7 | (22.8-44.4) | 303     | 33.5 | (26.3-41.5) |
| \$20,000-\$24,999                       | 634        | 31.3 | (25.8-37.4) | 231     | 26.9 | (20.1-34.9) | 403     | 34.6 | (26.7-43.4) |
| \$25,000-\$34,999                       | 851        | 26.2 | (22.1-30.8) | 384     | 22.7 | (17.7-28.6) | 467     | 30.5 | (24.4-37.4) |
| \$35,000-\$49,999                       | 1,125      | 29.6 | (26.2-33.3) | 526     | 29.7 | (25.1-34.7) | 599     | 29.6 | (24.5-35.2) |
| \$50,000-\$74,999                       | 1,037      | 27.5 | (24.1-31.2) | 486     | 30.5 | (25.6-36.0) | 551     | 24.1 | (19.6-29.3) |
| \$75,000+                               | 1,017      | 23.1 | (20.1-26.5) | 526     | 28.5 | (24.1-33.4) | 491     | 15.6 | (12.0-19.9) |

| Table 6 (continued)             |         |      |             |         |      |             |         |       |             |
|---------------------------------|---------|------|-------------|---------|------|-------------|---------|-------|-------------|
| Respondents Who Are Obese, 2007 |         |      |             |         |      |             |         |       |             |
|                                 |         | Tota | 1           |         | Male |             |         | Femal | e           |
|                                 | # Resp. | %    | 95% CI      | # Resp. | %    | 95% CI      | # Resp. | %     | 95% CI      |
| <b>Education</b>                |         |      |             |         |      |             |         |       |             |
| 8th Grade or Less               | 248     | 30.6 | (24.1-38.0) | 136     | 29.6 | (21.3-39.5) | 112     | 32.5  | (23.3-43.3) |
| Some High School                | 368     | 24.4 | (18.9-30.9) | 146     | 22.8 | (15.2-32.7) | 222     | 26.1  | (19.0-34.8) |
| High School or G.E.D.           | 2,137   | 28.1 | (25.2-31.2) | 985     | 25.6 | (22.3-29.3) | 1,152   | 30.9  | (26.2-36.1) |
| Some Post-High School           | 1,828   | 29.8 | (26.9-32.9) | 679     | 30.0 | (25.6-34.7) | 1,149   | 29.7  | (25.9-33.7) |
| College Graduate                | 1,946   | 24.1 | (21.7-26.8) | 837     | 29.6 | (25.8-33.7) | 1,109   | 18.4  | (15.6-21.6) |
| Employment Status               |         |      |             |         |      |             |         |       |             |
| Employed for Wages              | 3,041   | 27.5 | (25.4-29.8) | 1,274   | 28.9 | (25.9-32.1) | 1,767   | 26.1  | (22.9-29.5) |
| Self-employed                   | 948     | 27.8 | (24.1-31.9) | 636     | 27.1 | (22.8-31.9) | 312     | 29.7  | (23.1-37.3) |
| Unemployed                      | 150     | 28.9 | (19.6-40.3) | *       | *    | *           | *       | *     | *           |
| Homemaker                       | 399     | 25.3 | (19.3-32.5) | *       | *    | *           | *       | *     | *           |
| Retired                         | 1,579   | 24.9 | (22.5-27.6) | 625     | 28.2 | (24.2-32.6) | 954     | 22.0  | (19.2-25.2) |
| Unable to Work                  | 313     | 40.0 | (32.6-47.9) | 133     | 33.5 | (24.9-43.3) | 180     | 46.2  | (35.1-57.6) |
| Marital Status                  |         |      |             |         |      |             |         |       |             |
| Married/Unmarried Couple        | 3,926   | 27.8 | (26.1-29.7) | 1,805   | 30.2 | (27.7-32.8) | 2,121   | 25.3  | (22.8-27.9) |
| Divorced/Separated              | 903     | 26.3 | (22.8-30.2) | 397     | 25.9 | (21.2-31.3) | 506     | 26.7  | (21.7-32.4) |
| Widowed                         | 991     | 25.4 | (22.4-28.7) | 174     | 35.4 | (27.1-44.6) | 817     | 23.2  | (20.1-26.6) |
| Never Married                   | 704     | 26.0 | (21.0-31.8) | 408     | 20.6 | (15.7-26.6) | 296     | 35.0  | (25.3-46.2) |

Note: \*Results based on sample sizes less than 100 have been suppressed.

Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2007

### **National Statistics**

The national median for respondents who are obese was 26.3 percent. South Dakota had 27.2 percent of respondents who are obese. Colorado had the lowest percent of respondents who are obese with 19.3 percent, while Mississippi had the highest percent of respondents who are obese with 32.6 percent.

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Figure 4 Nationally, Respondents Who Are Obese, 2007

# **Further Analysis**

Following are data illustrating the percent of those who are obese for various health behaviors and conditions. For example, 50.7 percent of respondents who have diabetes are obese, while 25.5 percent of respondents who do not have diabetes are obese.

| Table 7 Obese Status for Selected Health Behaviors and Conditions, 2007 |               |         |           |  |  |  |  |
|---|---------------|---------|-----------|--|--|--|--|
| Health Behavior or Condition  | # Respondents | % Obese | 95% CI    |  |  |  |  |
| No Leisure Time Physical Activity                                       | 1,757         | 34.8    | 31.6-38.2 |  |  |  |  |
| Leisure Time Physical Activity  | 4,774         | 25.0    | 23.3-26.8 |  |  |  |  |
| No Moderate Physical Activity   | 3,361         | 31.7    | 29.4-34.1 |  |  |  |  |
| Moderate Physical Activity  | 2,743         | 22.9    | 20.8-25.3 |  |  |  |  |
| No Vigorous Physical Activity   | 4,947         | 29.9    | 28.1-31.8 |  |  |  |  |
| Vigorous Physical Activity  | 1,305         | 20.6    | 17.7-23.7 |  |  |  |  |
| Less Than Five Servings of Fruits and Vegetables                        | 5,110         | 29.0    | 27.2-30.8 |  |  |  |  |
| At Least Five Servings of Fruits and Vegetables                         | 1,308         | 20.1    | 17.3-23.2 |  |  |  |  |
| Current Smoker  | 1,243         | 28.7    | 24.8-33.0 |  |  |  |  |
| Former Smoker   | 1,904         | 30.1    | 27.5-32.9 |  |  |  |  |
| Never Smoked  | 3,378         | 25.5    | 23.4-27.6 |  |  |  |  |
| Smokeless Tobacco Use   | 302           | 29.1    | 23.0-36.0 |  |  |  |  |
| No Smokeless Tobacco Use  | 5,972         | 27.1    | 25.5-28.8 |  |  |  |  |
| Diabetes  | 621           | 50.7    | 45.5-55.9 |  |  |  |  |
| No Diabetes   | 5,914         | 25.5    | 24.0-27.2 |  |  |  |  |
| Hypertension  | 2,216         | 39.3    | 36.7-42.0 |  |  |  |  |
| No Hypertension   | 4,317         | 23.1    | 21.3-25.0 |  |  |  |  |
| High Blood Cholesterol  | 2,130         | 34.5    | 31.9-37.2 |  |  |  |  |
| No High Blood Cholesterol   | 3,266         | 24.8    | 22.8-27.1 |  |  |  |  |
| No Health Insurance (18-64)   | 383           | 29.5    | 23.4-36.4 |  |  |  |  |
| Health Insurance (18-64)  | 3,872         | 28.4    | 26.5-30.5 |  |  |  |  |
| Employer Based Health Insurance Coverage (18-64)                        | 2,474         | 27.2    | 25.0-29.6 |  |  |  |  |
| Private Health Insurance Plan (18-64)                                   | 541           | 24.4    | 19.9-29.6 |  |  |  |  |
| Medicare (18-64)  | 155           | 37.1    | 27.3-48.1 |  |  |  |  |
| Medicaid or Medical Assistance (18-64)                                  | 147           | 48.5    | 33.7-63.5 |  |  |  |  |
| The Military, CHAMPUS, TriCare, or the VA (18-64)                       | 220           | 26.1    | 19.0-34.9 |  |  |  |  |
| The Indian Health Service (18-64)                                       | 260           | 36.6    | 28.6-45.3 |  |  |  |  |
| No Flu Shot (65+)   | 477           | 23.9    | 19.6-28.7 |  |  |  |  |
| Flu Shot (65+)  | 1,526         | 22.1    | 19.8-24.6 |  |  |  |  |
| No Pneumonia Shot (65+)   | 684           | 19.4    | 16.1-23.3 |  |  |  |  |
| Pneumonia Shot (65+)  | 1,241         | 24.7    | 22.0-27.5 |  |  |  |  |
| Doesn't Use Sun Block   | 4,002         | 27.2    | 25.3-29.3 |  |  |  |  |
| Uses Sun Block  | 1,523         | 26.1    | 23.0-29.4 |  |  |  |  |
| Doesn't Know Cervical Cancer - HPV Connection (Females)                 | 728           | 25.0    | 21.1-29.4 |  |  |  |  |
| Knows Cervical Cancer - HPV Connection (Females)                        | 2,828         | 26.7    | 24.1-29.4 |  |  |  |  |
| Drank Alcohol in Past 30 Days   | 3,404         | 25.5    | 23.6-27.5 |  |  |  |  |
| No Alcohol in Past 30 Days  | 3,096         | 29.5    | 27.1-32.2 |  |  |  |  |
| Binge Drinker   | 865           | 26.8    | 22.9-31.1 |  |  |  |  |
| Not a Binge Drinker   | 5,544         | 27.5    | 25.8-29.3 |  |  |  |  |
| Heavy Drinker   | 219           | 25.0    | 17.1-35.0 |  |  |  |  |
| Not a Heavy Drinker   | 6,128         | 27.4    | 25.8-29.1 |  |  |  |  |
| Previously Had a Heart Attack   | 446           | 37.2    | 31.5-43.3 |  |  |  |  |
| Never Had a Heart Attack  | 6,064         | 26.7    | 25.1-28.4 |  |  |  |  |
| Have Angina or Coronary Heart Disease                                   | 388           | 33.2    | 27.8-39.0 |  |  |  |  |
| Do Not Have Angina or Coronary Heart Disease                            | 6,074         | 27.0    | 25.4-28.6 |  |  |  |  |
| Previously Had a Stroke   | 253           | 27.6    | 21.5-34.7 |  |  |  |  |
| Never Had a Stroke  | 6,270         | 27.2    | 25.6-28.8 |  |  |  |  |

| Table 7 (continued) Obese Status for Selected Health Behaviors and Conditions, 2007 |               |         |           |  |  |  |
|---|---------------|---------|-----------|--|--|--|
| Health Behavior or Condition  | # Respondents | % Obese | 95% CI    |  |  |  |
| Current Asthma  | 481           | 35.6    | 29.4-42.4 |  |  |  |
| Former Asthma   | 165           | 35.1    | 24.9-46.8 |  |  |  |
| Never Had Asthma  | 5,850         | 26.3    | 24.7-28.0 |  |  |  |
| Arthritis   | 2,304         | 34.8    | 32.2-37.4 |  |  |  |
| No Arthritis  | 4,134         | 24.4    | 22.6-26.4 |  |  |  |
| Arthritis - Activities Limited  | 1,093         | 42.9    | 39.1-46.8 |  |  |  |
| No Arthritis - Activities Limited   | 5,327         | 24.9    | 23.3-26.7 |  |  |  |
| Fair or Poor Health Status  | 1,092         | 42.2    | 38.2-46.3 |  |  |  |
| Excellent, Very Good, or Good Health Status   | 5,427         | 25.1    | 23.5-26.8 |  |  |  |
| Physical Health Not Good for 30 Days of the Past 30                                 | 490           | 40.0    | 34.4-45.8 |  |  |  |
| Physical Health Not Good for 0-29 Days of the Past 30                               | 5,909         | 26.5    | 24.9-28.1 |  |  |  |
| Mental Health Not Good for 20-30 Days of the Past 30                                | 352           | 39.9    | 32.5-47.8 |  |  |  |
| Mental Health Not Good for 0-19 Days of the Past 30                                 | 6,084         | 26.5    | 24.9-28.1 |  |  |  |
| Usual Activities Unattainable for 10-30 Days of the Past 30                         | 469           | 38.1    | 32.7-43.9 |  |  |  |
| Usual Activities Unattainable for 0-9 Days of the Past 30                           | 6,015         | 26.5    | 24.9-28.1 |  |  |  |
| Dissatisfied / Very Dissatisfied with Life  | 253           | 34.4    | 26.9-42.9 |  |  |  |
| Satisfied / Very Satisfied with Life  | 6,039         | 26.8    | 25.2-28.4 |  |  |  |
| Physical, Mental, or Emotional Disability   | 1,473         | 38.6    | 35.1-42.1 |  |  |  |
| No Physical, Mental, or Emotional Disability  | 4,997         | 24.6    | 22.9-26.4 |  |  |  |
| Disability with Special Equipment Needed  | 577           | 38.1    | 33.4-43.1 |  |  |  |
| No Disability with Special Equipment Needed   | 5,897         | 26.5    | 24.9-28.2 |  |  |  |
| Two or More Hours of TV Watched Per Day   | 4,659         | 29.7    | 27.8-31.7 |  |  |  |
| Less Than Two Hours of TV Watched Per Day   | 1,529         | 21.0    | 18.4-23.9 |  |  |  |
| Never Been Tested for HIV (18-64)   | 3,281         | 26.9    | 24.8-29.0 |  |  |  |
| Been Tested for HIV (18-64)   | 981           | 32.4    | 28.1-37.0 |  |  |  |
| Diarrhea in Past 30 Days  | 924           | 34.0    | 29.7-38.6 |  |  |  |
| No Diarrhea in Past 30 Days   | 5,359         | 26.0    | 24.3-27.7 |  |  |  |
| Military Veteran  | 992           | 29.1    | 25.7-32.8 |  |  |  |
| Not a Military Veteran  | 5,541         | 26.9    | 25.2-28.7 |  |  |  |